



WHZCF 2.1 V1

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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September 11, 2000

Mr. Cal Palmer  
Weyerhaeuser, Environment Health and Safety Division  
CHIK29  
PO Box 2999  
Tacoma, WA 98477-2999

RE: Feasibility Study Report Chlor-Alkali Plant Longview, Washington

Dear Mr. Palmer:

Thank you for providing a copy of the Feasibility Study Report (FS) and the opportunity to review and comment upon it. My comments (keyed generally to their occurrence in the document) are as follows:

**4.1/4.2**

These sections discuss the cleanup level development process and define the cleanup levels for the affected or potentially affected environmental media. It may be important to further examine the process to arrive at the decision to use Method B (for ground water) and Method C (for soils) clean up levels.

This site meets most of the criteria of a "routine cleanup action" as defined in chapter 173-340 WAC, the Model Toxics Control Act (MTCA). For example, there is only one hazardous substance present for which standards are "obvious and undisputed", and the cleanup involves an "obvious and limited choice of cleanup methods". MTCA Method A cleanup levels generally apply to routine cleanup actions. An exception is ground water, as ground water cleanup is "not normally considered a routine cleanup action" (WAC 173-340-130(7)).

However, by the above standards, Method A levels would seem to apply to soils—one of the principal affected environmental media at this site. The FS proposes instead the use of a Method C cleanup level. For the contaminant of concern at this site—mercury—that level is three orders of magnitude greater than the Method A industrial soil level of 1 mg/kg. The Method A level also happens to be consistent with the Method C protection level of ground water that I believe also may be appropriate in this case.

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The FS does not propose to use the Method C ground water protection level, maintaining that it is not applicable because ground water recharge does not occur through the affected soils. This is because most of the site is now capped, paved, or otherwise covered and the "pathway to ground water is incomplete". I agree that direct onsite meteoric recharge is negligible or even absent. However, the FS concludes elsewhere (3.3.3) that essentially all of the estimated contaminant loading to the Columbia River is discharged from alluvial soils. This is certainly a result of residual mercury in those soils exposed to ground water flux (a "pathway") and partitioning into dissolved phase. Further discussion of the cleanup level for soil may be necessary.

#### 4.3/4.5

I agree with the decision to declare a point of compliance (POC) at the ground water/surface water interface as ground water discharges to the Columbia River. However, as the FS points out, no wells are currently in position to monitor and confirm ground water cleanup levels will be achieved. Several wells (e.g., CH-3, CH-4, and CH-6) are certainly close, but may not be in the critical interface between ground water and the river itself. The FS reasons that past sampling results in sediment, surface water, and fish tissue indicate those applicable criteria are being met. However, without regular, ongoing sampling this will be difficult to demonstrate in the future. I would recommend a series of dedicated ground water POC wells for this purpose.

#### 5.3.3

The EPA document, *Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration* (1993), referenced is not listed in Section 7, **Works Cited**.

#### Table 5-3 Hydraulics/Flow

The hydraulic conductivity of the basalt alone is considered and evaluated as "Difficult Remediation". I agree with that assessment, but the alluvium (that is not mentioned here) has altogether different hydraulic properties that may, in fact, allow for less problematic remediation.

Because of its density, elemental mercury is not affected by vertical flow as described in the table. However, dissolved mercury—the phase presenting the obvious threat to ground water and, ultimately, surface water—certainly is.

#### 5.5.2

The discussion of treatment in this section implies that the contaminant loading to ground water is approximately 0.80 lb/yr. This number is at odds with statements elsewhere (e.g., 3.3.3) that ground water contributes approximately 0.60 lb/yr mercury to the Columbia River.

**5.6.2 (and other sections following)**

As discussed in the first comment above, I do not necessarily agree with statements that "cleanup levels have not been exceeded in soil..." or that "Mercury concentrations in soil...do not exceed cleanup standards."

**5.6.3 (Long-Term Effectiveness)**

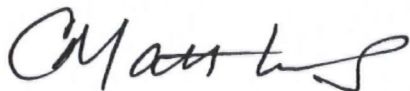
This alternative (barrier wall + treatment) is said to be "effective and reliable in eliminating or reducing the migration of mercury from the alluvial ground water zone to the Columbia River", certainly a primary goal for cleanup efforts. However, the text then goes on to say in the next sentence that "the barrier wall does not affect concentrations of mercury in ground water, except by natural attenuation." That would seem to be at odds with the discussion in 5.5.2 where this alternative is estimated to remove approximately 75% of mercury in the extracted ground water. If this statement is true, the alternative is a seemingly more effective treatment than natural attenuation processes and a measurable benefit to waters discharging into the Columbia River.

**5.6.3 (Permanent Reduction in Toxicity, Mobility, and Volume of Hazardous Substances)**

I agree that ground water remediation efforts result in no overall reduction of mercury toxicity. Those efforts simply transfer the mercury—an elemental substance that cannot be destroyed—elsewhere. However, I believe that adsorbed contaminant on activated carbon disposed in a landfill is certainly a better "location" for mercury than ground water.

Thank you again for the opportunity to comment. Please contact me at (360) 407-6388 if you have questions regarding this letter or Ecology's involvement with this site.

Sincerely,



Cris Matthews  
Regional Hydrogeologist  
Solid Waste & Financial Assistance Program

cc: Anne Summers, CH2MHill  
Monica Tonel, US EPA  
Paul Skyllingstad, Ecology